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U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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18 February, 1987

REPLY TO
ATTN OF:

M/S ES-098

Charles F. Kleeberg, Director
Environmental Health Division
Seattle-King County Department of Public Health
Room 1510 Public Safety Building
Seattle, Washington 98104

Chuck

Dear Mr. Kleeberg:

This is in response to your recent request that I review Dr. Tom Burbacher's executive summary of his proposed study of possible health effects associated with the Midway Landfill.

Epidemiologic studies are admittedly useful, especially in ascertaining "big picture" trends in large populations over protracted timespans. However, the utility of epidemiologic/ psychologic studies such as the one proposed is probably more of a palliative effort for the public than a program which will delineate factual relationships (if any) between perceived health effects and exposure to the landfill.

Several basic questions regarding the landfill are in need of answers. These include: (1) Just what chemical(s)/ viruses/ pathogens/ are coming from the landfill? (2) Which of these substances are in bioavailable form? (3) Is there human or environmental exposure to these materials? (4) What are the exposure routes? (5) If the foregoing steps are shown, then what is the dosing of the public/ environment from these routes, and (6) What will be the result of this dosing (what is the likely risk)?

In the fields of toxicology and risk assessment, it has been demonstrated over and over that although epidemiology is a useful procedure in many situations, the general rule is that epidemiologic studies- unless they go on for very long periods of time- do not deliver a "product" which the short-term risk manager is able to utilize in terms of a management solution.

On page 3, the second paragraph correctly points out that it does not appear that hazardous waste sites are thus far linked with serious health effects. BUT, it goes on to say, because of "limitations in past study designs, sample sizes, and statistical approaches", this lack of scientific evidence may be inaccurate. Thus, we have the essence of the authors' argument, which is basically to say that if one keeps looking hard and long enough, the terrible effects which one assumes are there will in fact be there.

The proposal would rely heavily upon the lay public for input and guidance. This is fine from the standpoint of social psychology and public policy, but is inappropriate for conducting a bias-free and objective examination of the toxicologic questions iterated in paragraph three above.

On page 5, paragraph 2, the authors examine the EPA and ATSDR criteria which have been proposed for developing registries for persons exposed to hazardous waste. They then say that "although these criteria are based on sound scientific principles, etc., strict adherance to these principles will only perpetuate the current lack of data regarding health problems of hazardous waste site communities." Ergo: enter the social sciences and epidemiology to "humanize" this dilemma and crystallize all this fuzziness for us by hyper-involving the lay public and asking them what should be done. This has been attempted before, by EPA (the recent ASARCO Smelter Hearings in Tacoma, for example), and with decidedly negative public perception. The lay public is the lay public, and scientific research is scientific research, and to altruistically seek to link the two is admirable. However, the lay public expects competent science to be able to investigate and assess a perceived problem, and does not wish to be asked by competent science, "what should we do?"

In addition to pouring money into a public program which is likely to furnish little factual information in the short term, and from which the City cannot easily disengage itself over the long term, I am concerned about the City of Seattle establishing a precedent for which it could later be embarassed. It is my opinion that the city's funding would be better spent by concentrating on other areas which need more attention at this time. These include: (a) developing first rate chemical and toxicological characterizations of the landfill to determine with certainty which chemicals/ pathogens, and so forth are present, and (b) exploring methods to cap and seal off the landfill to prevent exposure to whatever is there.

Perhaps one alternative would be to approach the Midway Landfill as a long-term intensive case study, as a model for other large sites in areas with widespread suburban development adjacent to such a site. Such a study should be taken on by a larger agency, for example, ATSDR, Washington DSHS, or Washington DOE, hopefully with assurance for long term funding to support intensive chemical monitoring and risk assessment modeling to complement the citizen-driven involvement proposed here. Without thorough monitoring data from the site, the program proposed here will only serve to mire the City deeper into a pubiic policy dilemma which seems well nigh unanswerable without the prior inclusion of a firm foundation of sound toxicological and risk assessment components.

Thank you for the opportunity to review this document.

Yours sincerely;

Michael Watson

Michael Watson, Ph.D., D.A.B.T.
Regional Toxicologist

cc: Neil Thompson, Midway Site Manager, Superfund Program
Paul Boys
William B. Schmidt
Joel Mulder, ATSDR Representative